

Corn Earworm Management In Field Corn

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Corn earworm is a pest of many agronomic and horticultural crops and because of this it has many common names soybean podworm, tomato fruitworm, and cotton bollworm. Many growers and consumers are

familiar with this insect in sweet corn as it attacks the kernels at the tip of the ear. It does the same damage in field corn, with damage restricted to kernels at the ear tip. Damage by this insect has been sporadic with early and mid season corn escaping some or all of the damage and late planted field corn sustaining substantial damage. Traditionally, corn growers have not had practical and cost effective tools to manage this insect and have accepted their losses in the past, both in terms of yield and reductions in quality.

Corn earworm can negatively impact field corn in several ways. By feeding on kernels at the tip of the ear, it directly can reduce grain yields. Early-planted corn escapes this damage, but ears of late-planted corn can have 20 or more damaged kernels. While kernels at the tip of the ear are generally less valuable, this feeding may reduce harvested grain by 2 to 8 bushels. In addition to reducing yield, earworm can also affect grain quality. Heavily damaged kernels are lost during harvest, but partially eaten kernels may end up in the grain. Damage to the ear and grain itself provides entry points for fungi and may increase rots. In fact, corn earworm damage is one of several factors that can contribute to aflatoxin contamination in corn.

Corn earworm is attracted to corn while the corn is silking. Fresh ear silks produce volatile chemicals that attract egg-laying female moths. So while the silks are fresh, egg laying can occur if moths are active. To control for earworm with insecticides, sprays need to be applied during the silking period and coverage needed in the center third of the plant. As silks continue to emerge from the ear, insecticides may need to be reapplied to ensure protection. For corn growers this has been both impractical and rarely economical to treat field corn for earworms. While sweetcorn producers can get ground equipment over the shorter sweet corn that is planted on smaller acreages, field corn usually requires aerial application during silking.

While corn earworm can overwinter in Kentucky soils, colder winters reduce winter survival. Early in the spring, moth activity is usually the result of earworm moths emerging locally. These local moth flights often occur during silk emergence with corn

planted prior to mid May but pose little economic threat in most years. However as the year progresses, much larger corn earworm moth flights arriving from the south are more likely. Wind currents generated in advance of low-pressure systems moving across the plains and Midwest can move large populations of earworm and other pests northward. Late planted corn, read that as planted in mid May or later in Kentucky, silks later in the summer and is more



Figure 1. Corn earworm damaging kernels in ear tip.



Figure 2. Adult corn earworm moth.

likely to be attacked by these large moth populations. It is not uncommon to see the tip of each ear with 20 or more earworm-damaged kernels with late-planted corn.

Some of the newer Bt technologies on the market can provide higher levels of corn earworm control than earlier Bt technologies. SmartStax, Optimum Intrasect, YieldGard Vt2 Pro, and Agrisure Viptera hybrids have improved control of secondary insect pests of corn, including corn earworm. This can be a valuable tool for Kentucky corn growers particularly when they find themselves in late-planting or replanting situations. Δ

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